This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (currently amended) An administration device for providing automatic performance optimization of virtualized storage allocation within a network of storage elements, comprising:

memory for storing data thereon; and

a processor configured for receiving from a user a request for storage of data, for determining workload requirements of the user making the request, for analyzing system parameters including performance characteristics of storage volumes within the network and for providing storage to meet the workload requirements of the user determined by the processor and to meet competing workload requirements based on the analysis of the system parameters wherein the processor is configured for determining workload requirements of the user by automatically creating workload requirements based on observations of storage access patterns of a user.

2. (Original) The administration device of claim 1, wherein the processor provides storage to meet the workload requirements based on the workload requirements of the user and storage requirements for the data.

3. (Original) The administration device of claim 1, wherein the processor provides storage to meet the workload requirements by selecting storage locations that meet performance and space requirements of the request.

4. (Original) The administration device of claim 3, wherein the processor selects storage locations that meet the performance and space requirements through analysis of the request for storage.

5. (Original) The administration device of claim 3, wherein the processor selects storage locations that meet the performance and space requirements through a storage policy mechanism.

6. (Original) The administration device of claim 1, wherein the processor determines workload attributes of the user and desired levels of performance, retains the

latest information about the available capacity within the network of storage elements, determines performance characteristics of individual storage devices at different locations within the network as a function of the workload requirements of the user, and determines a presence and attributes of competing workloads sharing the storage devices over extended periods of time.

7. (Previously Presented) The administration device of claim 1, wherein the processor is configured for determining workload requirements of the user by using canned workload descriptions that are based on characterizations of user environments across various industries and applications.

8. (cancelled)

9. (Previously Presented) The administration device of claim 1, wherein the processor is configured for determining workload requirements of the user by using intelligent software components that analyze workload descriptions for an application of the user.

10. (Original) The administration device of claim 1, wherein the processor is configured for accessing a virtualization engine and volume managers to stripe data within a virtual disk across managed storage devices.

11. (Original) The administration device of claim 1, wherein the processor is configured for determining how to relocate virtual disks to meet a desired level of performance.

12. (Original) The administration device of claim 1, wherein the processor is configured for performing a calibration process to discover the performance capabilities of the underlying storage devices.

13. (currently amended) A network storage system, comprising:

a plurality of storage devices;

a plurality of servers coupled to the plurality of storage devices via network interconnect; and

an administration device, coupled to at least the plurality of storage devices, for providing automatic performance optimization of virtualized storage allocation within a network of storage elements, wherein the administration device further comprises:

memory for storing data thereon; and

a processor configured for receiving from a user a request for storage of data, for determining workload requirements of the user making the request, for analyzing system parameters including performance characteristics of storage volumes within the network and for providing storage to meet the workload requirements of the user determined by the processor and to meet competing workload requirements based on the analysis of the system parameters wherein the processor is configured for determining workload requirements of the user by automatically creating workload requirements based on observations of storage access patterns of a user.

14. (Original) The network storage system of claim 13, wherein the processor provides storage to meet the workload requirements based on the workload requirements of the user and storage requirements for the data.

15. (Original) The network storage system of claim 13, wherein the processor provides storage to meet the workload requirements by selecting storage locations that meet performance and space requirements of the request.

16. (Original) The network storage system of claim 15, wherein the processor selects storage locations that meet the performance and space requirements through analysis of the request for storage.

17. (Original) The network storage system of claim 15, wherein the processor selects storage locations that meet the performance and space requirements through a storage policy mechanism.

18. (Original) The network storage system of claim 13, wherein the processor determines workload attributes of the user and desired levels of performance, retains the latest information about the available capacity within the network of storage elements, determines performance characteristics of individual storage devices at different locations within the network as a function of the workload requirements of the user, and determines a presence and attributes of competing workloads sharing the storage devices over extended periods of time.

19. (Previously Presented) The network storage system of claim 13, wherein the processor is configured for determining workload requirements of the user by using

canned workload descriptions that are based on characterizations of user environments across various industries and applications.

20. (cancelled)

21. (Previously Presented) The network storage system of claim 13, wherein the processor is configured for determining workload requirements of the user by using intelligent software components that analyze workload descriptions for an application of the user.

22. (Original) The network storage system of claim 13, wherein the processor is configured for accessing a virtualization engine and volume managers to stripe data within a virtual disk across managed storage devices.

23. (Original) The network storage system of claim 13, wherein the processor is configured for determining how to relocate virtual disks to meet a desired level of performance.

24. (Original) The network storage system of claim 13, wherein the processor is configured for performing a calibration process to discover the performance capabilities of the underlying storage devices.

25. (currently amended) A method for providing automatic performance optimization of virtualized storage allocation within a network of storage elements, comprising:

receiving from a user a request for storage of data;

determining workload requirements of the user making the request;

analyzing system parameters including performance characteristics of storage volumes within the network; and

providing storage to meet the determined workload requirements of the user and to meet competing workload requirements based on the analysis of the system parameters;

wherein the determining workload requirements of the user making the request further comprises automatically creating workload requirements based on observations of storage access patterns of a user.

26. (Original) The method of claim 25, wherein the providing storage to meet the workload requirements of the user is further based on the workload requirements of the user and storage requirements for the data.

27. (Original) The method of claim 25, wherein the providing storage to meet the workload requirements of the user further comprises selecting storage locations that meet performance and space requirements of the request.

28. (Original) The method of claim 27, wherein the selecting storage locations that meet the performance and space requirements are provided with the request for storage.

29. (Original) The method of claim 27, wherein the selecting storage locations that meet the performance and space requirements are provided through a storage policy mechanism.

30. (Original) The method of claim 25, wherein the analyzing system parameters further comprises determining the workload attributes of the user and desired levels of performance, retaining the latest information about the available capacity within the network of storage elements, determining performance characteristics of the storage devices at different locations within the network as a function of the workload requirements of the user, and determining a presence and attributes of competing workloads sharing the storage devices over extended periods of time.

31. (Previously Presented) The method of claim 25, wherein the determining workload requirements of the user making the request further comprises using canned workload descriptions that are based on characterizations of user environments across various industries and applications.

32. (cancelled)

33. (Previously Presented) The method of claim 25, wherein the determining workload requirements of the user making the request further comprises using intelligent software components that analyze workload descriptions for an application of the user.

34. (Original) The method of claim 25 further comprising accessing a virtualization engine and volume managers to stripe data within a virtual disk across managed storage devices.

35. (Original) The method of claim 34, wherein the striping data further comprises determining how to relocate virtual disks to meet a desired level of performance.

36. (Original) The method of claim 25, further comprising performing a calibration process to discover the performance capabilities of the underlying storage devices.

37. (currently amended) A program storage device readable by a computer, the program storage device tangibly embodying one or more programs of instructions executable by the computer to perform a method for providing automatic performance optimization of virtualized storage allocation within a network of storage elements, the method comprising:

receiving from a user a request for storage of data;

determining workload requirements of the user making the request;

analyzing system parameters including performance characteristics of storage volumes within the network; and

providing storage to meet the determined workload requirements of the user and to meet competing workload requirements based on the analysis of the system parameters;

wherein the determining workload requirements of the user making the request further comprises automatically creating workload requirements based on observations of storage access patterns of a user.

38. (Original) The program storage device of claim 19, wherein the analyzing system parameters further comprises determining workload attributes of the user and desired levels of performance, retaining the latest information about the available capacity within the network of storage elements, determining performance characteristics of storage devices at different locations within the network as a function of the workload requirements of the user, and determining a presence and attributes of competing workloads sharing the storage devices over extended periods of time.

39. (currently amended) An administration device for providing automatic performance optimization of virtualized storage allocation within a network of storage elements, comprising:

means for storing data thereon; and

means configured for receiving from a user a request for storage of data, for determining workload requirements of the user making the request, for analyzing system parameters including performance characteristics of storage volumes within the network and for providing storage to meet the workload requirements of the user and to meet competing workload requirements based on the analysis of the system parameters, wherein the determining workload requirements of the user making the request further comprises automatically creating workload requirements based on observations of storage access patterns of a user.

40. (currently amended) A network storage system, comprising:

first means for providing storage;

means for providing access to the means for providing storage; and

means, coupled to the means for providing storage ~~at least the plurality of storage devices~~, for providing automatic performance optimization of virtualized storage allocation within a network of storage elements, wherein the administration device further comprises:

second means for storing data thereon; and

means configured for receiving from a user a request for storage of data, for determining workload requirements of the user making the request, for analyzing system parameters including performance characteristics of storage volumes within the network and for providing storage to meet the workload requirements of the user and to meet competing workload requirements based on the analysis of the system parameters, wherein the determining workload requirements of the user making the request further comprises automatically creating workload requirements based on observations of storage access patterns of a user.

41 -43. (Canceled)